

**ABSTRACT**

To grind an outer peripheral surface of a work (10) for a non-circular rotor by a rotary grindstone (22) advanced and retreated by an NC control depending on the profile of the work (10), while rotating the work (10) about its axis, the following steps are carried out: a first step of detecting a predetermined lift amount of the outer peripheral surface of the work (10) at a given point to index a standard phase of the work (10); and a second step of advancing or retreating a grindstone 22 by the NC control depending on a standard phase of the work (10) indexed at the first step to grind the outer peripheral surface of the work (10). Thus, even if a special recess is not formed in the outer periphery of the work, the indexing of the standard phase of the work can be achieved properly.